

Claims

1. A stent for use within a body lumen of a patient, comprising:
- (a) a coil segment defining a lumen therethrough and including a distal portion, a middle portion, and a proximal portion, the coil segment comprising a wound element including one or more windings spaced from each other along at least a portion of the length of the coil segment and being reducible in width at least to an extent needed to pass the stent into the body lumen of the patient by winding the wound element, each of the distal and proximal portions including a diameter greater than a diameter of the middle portion when the stent is positioned and left within the body lumen of the patient; and
- (b) a flexible polymer material encapsulating at least a portion of the coil segment and disposed between the spaced windings of the wound element to form an imperforate flexible webbing between the windings that inhibits ingrowth of body tissue between the windings when the stent is placed within the body lumen of the patient while also maintaining the lumen of the coil segment open.
2. The stent of claim 1 wherein the wound element comprises a wire of a biocompatible material.
3. The stent according to claim 2 wherein the biocompatible material is selected from the group consisting of stainless steel, titanium, a nickel-titanium alloy, or a polymer.
4. The stent of claim 2 wherein a cross-sectional area of the wire is in the range of from about  $7.9 \times 10^{-3}$  millimeters<sup>2</sup> to about 7.1 millimeters<sup>2</sup>.
5. The stent of claim 1 wherein the spaced windings are separated by a distance in the range of from about 0.5 millimeters to about 10 millimeters.
6. The stent of claim 1 wherein each of the distal and proximal portions includes one or more hooks to permit connection to a delivery system.

7. The stent of claim 1 wherein the flexible polymer material comprises a low durometer silicone.

8. The stent of claim 7 wherein the low durometer silicone has a Shore A hardness in the range of from about 0 durometers to about 60 durometers.

9. A method of attaching a stent to a delivery system, comprising:

(a) providing a stent for use within a body lumen of a patient, comprising:

a coil segment defining a lumen therethrough and including a distal portion, a middle portion, and a proximal portion, the coil segment comprising a wound element including one or more windings spaced from each other along at least a portion of the length of the coil segment and being reducible in width at least to an extent needed to pass the stent into the body lumen of the patient by winding of the wound element, each of the distal and proximal portions including a diameter greater than a diameter of the middle portion when the stent is positioned and left within the body lumen of the patient, and

a flexible polymer material encapsulating at least a portion of the coil segment and disposed between the spaced windings of the wound element to form an imperforate flexible webbing between the windings that inhibits ingrowth of body tissue between the spaced windings when the stent is placed within the body lumen of the patient while also maintaining the lumen of the coil segment open;

(b) providing a delivery system comprising:

a first element having an outer diameter smaller than the diameter of the middle portion of the stent and including a first end, a second end, and a connection member extending out from the first end, and

a second element including a first end, a second end, and a connection member extending out from the first end, at least one of the first and second elements of the delivery system being rotatable;

(c) placing the first element of the delivery system within the lumen of the coil segment;

(d) attaching the connection member of the first element to the proximal portion of the stent;

(e) attaching the connection member of the second element to the distal portion of the stent; and

(f) rotating at least one of the first and the second elements to further wind the wound element to reduce the width of the stent at least to an extent needed to pass stent into the urethra of the patient.

10. The method of claim 9 wherein the connection member of the first element comprises an arm extending radially outward from the first end and includes an opening sized to receive a hook extending from the proximal portion of the stent.

11. The method of claim 9 wherein the connection member of the second element comprises an arm extending radially outward from the first end and includes an opening sized to receive a hook extending from the distal portion of the stent.

12. The method of claim 9 wherein the second element defines a lumen extending therethrough and sized to receive the first element.

13. A method of positioning a stent within a body lumen of a patient, comprising:

(a) providing a stent and a delivery system,  
the stent comprising:

a coil segment defining a lumen therethrough and including a distal portion, a middle portion, and a proximal portion; the coil segment comprising a wound element including one or more windings spaced from each other along at least a portion of the length of the coil segment and being reducible in width at least to an extent needed to pass the stent into the body lumen of the patient by winding of the wound element, each of the distal and proximal portions including a diameter greater than a diameter of the middle portion when the stent is positioned and left within the body lumen of the patient, and

a flexible polymer material encapsulating at least a portion of the coil segment and disposed between spaced windings of the wound element to form an imperforate flexible webbing between the windings that inhibits ingrowth of body tissue between the

spaced windings of the stent when placed within the body lumen of the patient while maintaining the lumen of the coil segment open, and the delivery system comprising:

a first element having an outer diameter smaller than the diameter of the middle portion of the stent and including a first end, a second end, and a connection member extending out from the first end and attached to the proximal portion of the stent, the first element disposed within the lumen of the coil segment, and

a second element including a first end, a second end, and a connection member extending out from the first end and attached to the distal portion of the stent, at least one of the first and the second elements of the delivery system being rotatable, the stent being wound onto at least a portion of the first element to reduce the width of the stent at least to an extent needed to pass the stent into the urethra of the patient;

(b) inserting the delivery system with the attached and wound stent into the urethra of the patient;

(c) positioning the stent within the prostatic urethra of the patient with the proximal portion located within the bladder opening and the distal portion located proximal to the external sphincter;

(d) rotating at least one of the first and second elements of the delivery system to at least partially unwind the stent;

(e) releasing the stent from the connection members of the delivery system; and

(f) removing the delivery system from the patient's urethra.

14. The method of claim 13 wherein the connection member of the first element comprises an arm extending radially outward from the first end and includes an opening sized to receive a hook extending from the proximal portion of the stent.

15. The method of claim 13 wherein the connection member of the second element comprises an arm extending radially outward from the first end and includes an opening sized to receive a hook extending from the distal portion of the stent.

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Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
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